



Protezioni
Elaborazioni
Industriali

BI-MU 2026: PEI presents innovation and advanced technologies for machine tools

At **BI-MU 2026**, PEI will present two major innovations that further strengthen its commitment to the development of advanced dynamic protection systems for machine tools.

For more than 45 years, the company has been designing solutions that improve machine reliability, safety and performance. This year, PEI introduces a new **wireless drive system** for the Wave Sky roof bellows and a **new generation of wipers manufactured using additive technology**, engineered to reduce friction and enhance machine accuracy.

The first innovation is the new **E-SmartDrive Wireless**. The system completely eliminates wired connections between the moving crossbeam and the machine tool, **thanks to the E-Drive electronic control unit, entirely designed and developed by PEI**.

By removing conventional cable carriers, the system simplifies installation, significantly reduces assembly time and costs, and frees up valuable space inside the machining centre, improving both accessibility and ease of maintenance.

Another key advantage is increased operational reliability.

Eliminating cables also removes one of the most common causes of machine downtime, reducing maintenance requirements and improving overall productivity.

The entire electronic platform and its **firmware** have been developed entirely in-house, representing a significant technological advancement that is currently the subject of a patent application.

Particular attention has also been paid to safety.

The **Wave Sky** moving crossbeam integrates an emergency stop system with a tape switch that immediately stops machine movement if an obstacle is detected, helping to protect both the operator and the machine.

The drive system has also been designed with retrofit applications in mind, making it possible to upgrade existing Wave Sky systems originally supplied without motorization.

The second innovation on display at **BI-MU** is **the new generation of PEI wipers**.

Although they are relatively small components, wipers play a crucial role in protecting machine guideways by preventing chips, dust and coolant from contaminating the sliding surfaces, thereby preserving long-term machine accuracy and performance.

Thanks to an internally developed **additive manufacturing technology**, covering both the design of the printers and the proprietary polymer materials used, PEI introduces a **new family of 3D-printed wipers**.

The use of an **innovative proprietary polyurethane** reduces the stick-slip effect by up to 50%, resulting in smoother axis movement.

Lower friction also means reduced vibration, less component wear, quieter operation and improved machining quality.



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Two different innovations, united by the same objective: providing machine tool manufacturers with proprietary technologies that increase efficiency, reliability and competitiveness.

www.pei.it

Press contact: Federica Nasseti fnasseti@pei.it